What is claimed is:

1. A semiconductor device manufacturing apparatus comprising:

a chamber provided with an inlet and an outlet of gas, said chamber having an upper part with a dome configuration;

a susceptor provided in said chamber to permit a wafer to be placed thereon; and

a plasma electrode to which RF power is applied to generate plasma within said chamber;

wherein said plasma electrode has a dome configuration to cover said upper part, and wherein the upper polar part of said electrode is cut horizontally to form an opening.

2. The semiconductor device manufacturing apparatus according to claim 1, said opening has a width of about 70mm to 300mm.

3. A thin film forming method using a semiconductor device manufacturing apparatus comprising a chamber provided with an inlet and an outlet of gas, said chamber having an upper part with a dome configuration, a susceptor provided in said chamber to permit a wafer to be placed thereon, and a plasma electrode to which RF power is applied to generate plasma within said chamber, wherein said plasma electrode has a dome configuration to cover said upper part, and wherein the upper polar part of said electrode is cut horizontally to form an opening;

wherein said plasma electrode is applied with RF power of about 700W to 1000W whereby Si_xN_y thin film has good thickness uniformity while containing less amount of hydrogen when using hydrogen containing plasma to form said Si_xN_y thin film.

4. The thin film forming method according to claim 3, said hydrogen containing plasma is formed by mixed gas of SiH_4 and NH_3.

5. A thin film forming method using a semiconductor device manufacturing apparatus comprising a chamber provided with an inlet and an outlet of gas, said chamber having an upper part with a dome configuration, a

susceptor provided in said chamber to permit a wafer to be placed thereon, and a plasma electrode to which RF power is applied to generate plasma within said chamber, wherein said plasma electrode has a dome configuration to cover said upper part, and wherein the upper polar part of said electrode is cut horizontally to form an opening;

wherein said plasma electrode is applied with RF power of about 500W to 1000W whereby said DLC thin film or SiC thin film has good thickness uniformity while containing less amount of hydrogen when using hydrogen containing plasma to form DLC thin film or SiC thin film.

6. The thin film forming method according to claim 5, said hydrogen containing plasma is formed by mixed gas of CH_4 and H_2 when forming said DLC thin film, and by mixed gas of SiH_4, CH_4 and H_2 when forming said SiC thin film.